Amendments to the Claims

The following listing of claims will replace all prior versions, and listings, of claims in the present application:

1. (Currently Amended) A corrosion-inhibiting pigment composition comprising:

a corrosion-inhibiting pigment comprising cobalt, wherein the cobalt is trivalent cobalt, tetravalent cobalt, or combinations thereof, and a valence stabilizer combined to form a cobalt/valence stabilizer complex and wherein the cobalt in is the trivalent or tetravalent oxidation state in the pigment, wherein the cobalt/valence stabilizer complex has a solubility in water of between about 1 X 10^{-1} and about 5 X 10^{-5} moles per liter of cobalt at about 25°C and about 760 Torr; and

a coating system comprising a carrier system and a binder system, or a carrier system and a resin system, or both.

2. (Canceled)

3. (Currently Amended) The pigment composition of claim [[2]] 1 wherein the solubility of the cobalt/valence stabilizer complex in water is between about 1 X 10^{-1} and about 1 X 10^{-4} moles per liter of cobalt at about 25°C and about 760 Torr.

4. (Currently Amended) The pigment composition of claim 1 wherein there is an electrostatic barrier layer around the cobalt/valence stabilizer complex in aqueous solution.

5. (Currently Amended) The pigment composition of claim 1 wherein the cobalt/valence stabilizer complex acts as an ion exchange agent towards corrosive ions.

6. (Currently Amended) The pigment composition of claim 1 wherein the cobalt/valence stabilizer complex decomposes above about 100°C.

7. (Currently Amended) The pigment composition of claim 1 wherein the cobalt/valence stabilizer complex melts above about 50°C.

8. (Currently Amended) The pigment composition of claim 1 wherein the valence stabilizer is selected from an inorganic valence stabilizer and an organic valence stabilizer.

9. (Currently Amended) The pigment composition of claim 8 wherein the valence stabilizer is the inorganic valence stabilizer selected from molybdates; tungstates; vanadates; niobates; tantalates; tellurates; periodates; iodates; carbonates; antimonates; stannates; titanates; zirconates; hafnates; bismuthates; germanates; arsenates; phosphates; borates; aluminates; and silicates; and combinations thereof.

10. (Currently Amended) The pigment composition of claim 9 wherein the valence stabilizer is the inorganic valence stabilizer selected from molybdates; tungstates; vanadates; niobates; tantalates; tellurates; periodates; iodates; carbonates; antimonates; and stannates; and combinations thereof.

11. (Currently Amended) The pigment composition of claim 9 wherein the cobalt/valence stabilizer complex has a central cavity containing a cobalt ion and an additional ion.

12. (Currently Amended l) The pigment composition of claim 11 wherein the additional ion is B^{+3}, Al^{+3}, Si^{+4}, P^{+5}, Ti^{+4}, V^{+5}, V^{+4}, Cr^{+6}, Cr^{+3}, Mn^{+4}, Mn^{+3}, Mn^{+2}, Fe^{+3}, Fe^{+2}, Co^{+2}, Ni^{+2}, Ni^{+3}, Ni^{+4}, Cu^{+2}, Cu^{+3}, Zn^{+2}, Ga^{+3}, Ge^{+4}, As^{+5}, As^{+3}, Zr^{+4}, or Ce^{+4}.

13. (Withdrawn) The pigment of claim 8 wherein the valence stabilizer is the organic valence stabilizer selected from monoamines; diamines; triamines; tetraamines; pentamines; hexamines; five- or six-membered heterocyclic rings containing one to four nitrogen atoms optionally having additional nitrogen, sulfur, or oxygen binding sites; five- or six-membered heterocyclic rings containing one or two sulfur atoms and having additional nitrogen binding sites; five- or six-membered heterocyclic rings containing one or two oxygen atoms and having additional nitrogen binding sites; (two-, three-, four-, six-, eight-, or ten-)membered nitrogen, nitrogen-sulfur, or nitrogen-oxygen macrocyclics; macrocyclic oligothioketones or dithiolenes; diazenes; thio-, amido-, or imido- derivatives of hypophosphoric, phosphoric, or diphosphoric acids and salts; azo compounds, triazenes, formazans, azines, hydrazones, or Schiff Bases containing at least two azo, imine, or azine groups; azo compounds, triazenes, formazans, azines, hydrazones, or Schiff Bases with ortho- (for aryl) or alpha- or beta- (for alkyl) substitution; oximes; amidines and imido compounds; dithio ligands; amides; amino acids; N-(thio)acyl 7-aminobenzylidenimines; (thio)hydroxamates; alpha- or ortho-aminothio(di)carboxylic acids and salts; (thio)semicarbazones; (thio)acyl hydrazones; (thio)carbazones; silylaminoalcohols; thioalkyl amines and imines; hydroxyalkyl imines; (thio)aryl amines and imines; guanylureas; guanidinoureas; 2-nitrosophenols; 2-nitrophenols; N-nitrosohydroxylamines; 1,3-monothioketones; monothiomalonamides; 2-thioacylacetamides; 2-acylthioacetamides; dithiodicarbonic diamides; trithiodicarboxylic acids and salts; monothiocarbamates; monothioethers; dithioethers; trithioethers; tetrathioethers; pentathioethers; hexathioethers; disulfides; monophosphines; diphosphines; triphosphines; tetraphosphines; pentaphosphines; hexaphosphines; five- or six-membered heterocyclic rings containing one or two sulfur atoms optionally having additional sulfur, oxygen, or phosphorus binding sites; five- or six-membered heterocyclic rings containing one to three phosphorus atoms optionally having additional phosphorus, nitrogen, oxygen, or sulfur binding sites; five- or six-membered heterocyclic rings containing one to four nitrogen atoms and having additional phosphorus binding sites; five- or six-membered heterocyclic rings containing one or two oxygen atoms and having additional sulfur or phosphorus binding sites; (five-, seven-, or nine-)membered

nitrogen, nitrogen-sulfur, or nitrogen-oxygen macrocyclics; (two- to ten-)membered sulfur, sulfur-oxygen, or sulfur-phosphorus macrocyclics, not including oligothioketones or dithiolenes; (two- to ten-)membered phosphorus, nitrogen-phosphorus, or oxygen-phosphorus macrocyclics; thio-, amido-, or imido- derivatives of phosphonic and diphosphonic acids and salts containing no sulfur binding sites; amido-, or imido- derivatives of hypophosphoric, phosphoric, or diphosphoric acids and salts containing no sulfur binding sites; dithioperoxydiphosphoramides; dithioperoxydiphosphoric acids and salts; monothioperoxydiphosphoramides; monothioperoxydiphosphoric acids and salts; monothiophosphoric acids; phosphoro(dithioperoxoic) acids and salts; azo compounds, triazenes, formazans, azines, or Schiff Bases; silylamines; silazanes; guanidines and diguanidines; pyridinaldimines; hydrazones; hydramides; nitriles; thioureas and thioamides; ureas and biurets; monothio ligands; diketone ligands; dithioacyl disulfides; tetrathioperoxydicarbonic diamides; (hexa-, penta-, or tetra-)thioperoxydicarbonic acids and salts; 1,2-dithiolates; rhodanines; dithiocarbimates; (thio)xanthates; S-(alkyl- or aryl-thio)thiocarboxylic acids and salts; phosphinodithioformates; (thio)borates and (thio)boronates; (thio)arsonic acids and salts; (thio)antimonic acids and salts; phosphine and arsine sulfides or oxides; beta-hydroxyketones and –aldehydes; squaric acids and salts; carbonates; carbamates and carbimates; carbazates; imidosulfurous diamides; sulfurdiimines; thiocarbonyl and mercapto oximes; 2-nitrothiophenols; 2-nitrilo(thio)phenols; acylcyanamides; imidates; 2-amidinoacetates; beta-ketoamines; 3-aminoacrylamides and 3,3-diaminoacrylamides; 3-aminoacrylic acids and salts and 3-hydroxy-3-aminoacrylic acids and salts; 2-nitroanilines; amine and diazine N-oxides; hydrazides and semicarbazides; (amino- or imino-)aryl phosphines; (thio- or hydroxy-)aryl phosphines; arsines; five- or six-membered heterocyclic rings containing one arsenic atom optionally having additional arsenic binding sites;(two- to six-)membered arsenic macrocyclics; selenoethers; five- or six-membered heterocyclic rings containing one or two selenium atoms optionally having additional selenium binding sites; (two- to six-)membered selenium macrocyclics; 1,3-diselenoketones; 1,1-diselenolates; diselenocarbamates; selenophosphoric acids and salts; selenocarbonates; cyanide, isocyanide, and cyanamide ligands; nitrosyl and nitrite ligands; azide ligands; thiolates and

selenolates; (thio)cyanate ligands; diene or bicyclic or tricyclic hydrocarbon ligands; and carbonyl, halogen, and hydroxo ligands; and combinations thereof.

14. (Withdrawn) The pigment of claim 13 wherein the organic valence stabilizer is selected from monoamines; diamines; triamines; tetraamines; pentamines; hexamines; five- or six-membered heterocyclic rings containing one to four nitrogen atoms optionally having additional nitrogen, sulfur, or oxygen binding sites; five- or six-membered heterocyclic rings containing one or two sulfur atoms and having additional nitrogen binding sites; five- or six-membered heterocyclic rings containing one or two oxygen atoms and having additional nitrogen binding sites; (two-, three-, four-, six-, eight-, or ten-)membered nitrogen, nitrogen-sulfur, or nitrogen-oxygen macrocyclics; macrocyclic oligothioketones or dithiolenes; diazenes; thio-, amido-, or imido- derivatives of hypophosphoric, phosphoric, or diphosphoric acids and salts; azo compounds, triazenes, formazans, azines, hydrazones, or Schiff Bases containing at least two azo, imine, or azine groups; azo compounds, triazenes, formazans, azines, hydrazones, or Schiff Bases with ortho- (for aryl) or alpha- or beta- (for alkyl) substituted azo compounds, triazenes, formazans, axines, hydrazones, or Schiff Bases; oximes; amidines and imido compounds; dithio ligands; amides; amino acids; N-(thio)acyl 7-aminobenzylidenimines; (thio)hydroxamates; alpha- or ortho-aminothio(di)carboxylic acids and salts; (thio)semicarbazones; (thio)acyl hydrazones; (thio)carbazones; silylaminoalcohols; thioalkyl amines and imines; hydroxyalkyl imines; (thio)aryl amines and imines; guanylureas; guanidinoureas; 2-nitrosophenols; 2-nitrophenols; N-nitrosohydroxylamines; 1,3-monothioketones; monothiomalonamides; 2-thioacylacetamides; 2-acylthioacetamides; dithiodicarbonic diamides; trithiodicarboxylic acids and salts; and monothiocarbamates; and combinations thereof.

15. (Withdrawn) The pigment of claim 13 wherein the organic valence stabilizer is the diazene selected from diazeneformimidamides; diazeneformamides; diazeneformothioamides; diazeneacetimidamides; diazeneacetothioamides; diazeneformimidic acids and salts; diazeneacetimidic acids and salts; diazenecarbothioic acids and salts; diazenecarbodithioic acids and

salts; diazeneformimidothioic acids and salts; diazeneformaldehydes; diazeneformothioaldehydes; diazeneacetaldehydes; diazeneacetothioaldehydes; diazenediformamides; diazenediformothioamides; diazenediacetamides; diazenediacetothioamides; diazeneacetimidothioic acids and salts; imidoyldiazenes; diazenediformimidamides; diazenediacetimidamides; diazenediformimidic acids and salts; diazenediacetimidic acids and salts; diazenediformimidothioic acids and salts; diazenediacetimidothioic acids and salts; diazenedicarbothioic acids; diazenedicarbodithioic acids; diazeneformic acids; diazenediformic acids; diazeneacetic acids; diazenediacetic acids; diazenediformaldehydes; diazenediformothioaldehydes; diazenediacetaldehydes; diazenediacetothioaldehydes; and diimidoyldiazenes; and combinations thereof.

16. (Withdrawn) The pigment of claim 13 wherein the organic valence stabilizer is the thio-, amido-, or imido-derivative of hypophosphoric, phosphoric, or diphosphoric acids and salts selected from phosphoramidimidic triamides; phosphoramidimidic acids and salts; phosphorodiamidimidic acids and salts; phosphorodiamidimidothioic acids and salts; phosphoramidimidothioic acids and salts; phosphorodiamidimidodithioic acids and salts; phosphoramidimidodithioic acids and salts; (di- or mono-)thiohypophosphoric acids and salts; (di- or mono-)thiohypophosphoramides; phosphoramidic acids and salts; phosphorimidic acids and salts; (di- or mono-)thioimidodiphosphoric acids and salts; (di- or mono-)thiohydrazidodiphosphoric acids and salts; (di- or mono-)thioimidodiphosphoramides; (di- or mono-)thiohydrazidodiphosphoramides; phosphoric triamides; (di- or mono-)thiodiphosphoramides; (di- or mono-)thiodiphosphoric acids and salts; (tetra-, tri-, di-)thiophosphoric acids and salts; phosphoro(dithioperoxo)(mono-,di-, or tri-)thioic acids and salts; phosphorimido(mono-, di-, or tri-)thioic acids and salts; phosphorothioic triamides; phosphoramido(mono, di- or tri-)thioic acids and salts; and phosphorodiamido(mono, di- or tri-)thioic acids and salts; and combinations thereof.

17. (Withdrawn) The pigment of claim 13 wherein the organic valence stabilizer is a substituent for the ortho- (for aryl) or alpha- or beta- (for alkyl) substituted azo compounds, triazenes,

formazans, azines, hydrazones, or Schiff Bases selected from amino; imino; oximo; diazeno; hydrazido; thiol; mercapto; thiocarbonyl; hydroxy; carbox; and carbonyl substituents, and combinations thereof.

18. (Withdrawn) The pigment of claim 13 wherein the organic valence stabilizer is the oxime selected from monooximes; dioximes; carbonyl oximes; imine oximes; hydroxy oximes; amino oximes; amido oximes; hydrazone oximes, and azo oximes; and combinations thereof.

19. (Withdrawn) The pigment of claim 13 wherein the organic valence stabilizer is the amidine and imido compound selected from amidines; diamidines; biguanides; biguanidines; diamidinomethanes; imidoylguanidines; amidinoguanidines; diformamidine oxides, sulfides, and disulfides; imidodicarbonimidic acids and salts; diimidodicarbonimidic acids and salts; thioimidodicarbonimidic acids and salts; thiodiimidodicarbonimidic acids and salts; diimidoylimines; diimidoylhydrazides; imidosulfamides; diimidosulfamides; O-amidinocarbamates; O- or S-amidino(mono-, di-, or peroxy-)thiocarbamates; N-hydroxy(or N,N'-dihydroxy)amidines; and diimidosulfuric acids and salts; and combinations thereof.

20. (Withdrawn) The pigment of claim 13 wherein the organic valence stabilizer is the dithio ligand selected from dithioimidodialdehydes; dithiohydrazidodialdehydes; dithioimidodicarbonic acids and salts; dithiohydrazidodicarbonic acids and salts; 1,3-dithioketones; 1,2-dithioketones; dithiomalonamides; 2-thioacylthioacetamides; dithioacyl sulfides; trithiodicarbonic diamides; (penta-, tetra-, tri-)thiodicarbonic acids and salts; beta-mercaptothioketones and –aldehydes; N-(aminomethylthiol)thioureas; dithiooxamides; 1,1-dithiolates; (di- or per-)thiomonocarboxylic acids and salts; (tetra- or per-)thiodicarboxylic acids and salts; (di-, tri-, or per-)thiocarbonates; dithiocarbamates (including N-hydroxydithiocarbamates and N-mercaptodithiocarbamates); and dithiocarbazates; and combinations thereof.

21. (Withdrawn) The pigment of claim 13 wherein the organic valence stabilizer is the amide selected from monoamides; lactams; amidinoamides; guanidinoamides; imidoylamides; polyamides; and polylactams; and combinations thereof.

22. (Withdrawn) The pigment of claim 13 wherein the organic valence stabilizer is the thio-, amido-, or imido-derivative of phosphonic and diphosphonic acids and salts selected from phosphonitrile amides; phosphonimidic diamides; phosphonamidimidic acids and salts; phosphonamidimidothioic acids and salts; dithioimidodiphosphonic acids and salts; dithiohydrazidodiphosphonic acids and salts; dithioimidodiphosphonamides; dithiohydrazidodiphosphonamides; dithiodiphosphonamides; dithiodiphosphonic acids and salts; dithioperoxydiphosphonamides; dithioperoxydiphosphonic acids and salts; (di- and tri-)thiophosphonic acids and salts; phosphono(dithioperoxo)thioic acids and salts; phosphono(dithioperoxo)dithioic acids and salts; phosphonimidothioic acids and salts; phosphonimidodithioic acids and salts; phosphonothioic acids and salts; phosphonanidothioic acids and salts; phosphonamidimidodithioic acids and salts; monothioimidodiphosphonic acids and salts; monothiohydrazidodiphosphonic acids and salts; monothioimidodiphosphonamides; monothiohydrazidodiphosphonamides; monothiodiphosphonamides; monothiodiphosphonic acids and salts; monothioperoxydiphosphonamides; monothioperoxydiphosphonic acids and salts; monothiophosphonic acids and salts; and phosphono(dithioperoxoic) acids and salts; and combinations thereof.

23. (Withdrawn) The pigment of claim 13 wherein the organic valence stabilizer is the amido-, or imido- derivative of hypophosphoric, phosphoric, or diphosphoric acids and salts containing no sulfur binding sites selected from hypophosphoric acids and salts; hypophosphoramides; imidodiphosphoric acids and salts; hydrazidodiphosphoric acids and salts; imidodiphosphoramides; hydrazidodiphosphoramides; and diphosphoramides; and combinations thereof.

24. (Withdrawn) The pigment of claim 13 wherein the organic valence stabilizer is the amido-, or imido- derivative of phosphonic or diphosphonic acids and salts containing no sulfur binding sites selected from imidodiphosphonic acids and salts; hydrazidodiphosphonic acids and salts; imidodiphosphonamides; hydrazidodiphosphonamides; diphosphonamides; phosphonimidic acids and salts; phosphonamidic acids and salts; and phosphonic diamides; and combinations thereof.

25. (Withdrawn) The pigment of claim 13 wherein the organic valence stabilizer is the thiourea and thioamide selected from thioureas; thiocarboxamides; thioacylthioureas, acylthioureas, and thioacylureas; thioaroylthioureas, aroylthioureas, and thioaroylureas; thioimidates; thioguanylureas; guanidinothioureas; amidinothioamides; guanidinothioamides; imidoylthioamides; 3-aminothioacrylamides; thiohydrazides; thiosemicarbazides; (mono- and di-)thiobiurets; (mono- and di-)thioisobiurets; (mono- and di-)thiobiureas; N-(aminomethylol)thioureas; N-(aminomethylthiol)ureas; and beta-mercaptocarboxamides; and combinations thereof.

26. (Withdrawn) The pigment of claim 13 wherein the organic valence stabilizer is the urea and biuret selected from ureas and pseudoureas; biurets, isobiurets, and biureas; acylureas; aroylureas; and N-(aminomethylol)ureas; and combinations thereof.

27. (Withdrawn) The pigment of claim 13 wherein the organic valence stabilizer is the monothio ligand selected from beta-aminothiones; 3-aminothioacrylic acids and salts; 3-mercapto-3-aminothioacrylic acids and salts; N-thioacyl benzylidenimines; thioimidodialdehydes; thiohydrazidodialdehydes; thioimidodicarbonic acids and salts; thiohydrazidodicarbonic acids and salts; 1,2-monothioketones; trithioperoxydicarbonic diamides; dithioperoxydicarbonic diamides; dithiodicarbonic acids and salts; trithioperoxydicarbonic acids and salts; beta-hydroxythioketones; beta-hydroxythioaldehydes; beta-mercaptoketones; beta-mercaptoaldehydes; monothiooxamides; beta-mercaptocarboxylic acids and salts; beta-mercaptothiocarboxylic acids and salts; beta-hydroxythiocarboxylic acids and salts; S-alkylthiocarboxylic acids and salts; S-arylthiocarboxylic

acids and salts; S-alkyldisulfidocarboxylic acids and salts; S-aryldisulfidocarboxylic acids and salts; monothiomonocarboxylic acids and salts; dithiodicarboxylic acids and salts; monothiocarbonates; monothiocarbazates; monothiocarbimates; mercaptoalcohols; and silylmercaptoalcohols; and combinations thereof.

28. (Withdrawn) The pigment of claim 13 wherein the organic valence stabilizer is the diketone ligand selected from imidodialdehydes; hydrazidodialdehydes; imidodicarbonic acids and salts; hydrazidodicarbonic acids and salts; imidodisulfamic acids and salts; imidodisulfuric acids and salts; 1,3-diketones; 1,2-diketones; malonamides; 2-acylacetamides; monothiodicarbonic diamides; monothiodicarbonic acids and salts; dithioperoxydicarbonic acids and salts; trithionic acids and salts; oxamides; and dicarboxylic acids; and combinations thereof.

29. (Withdrawn) The pigment of claim 13 wherein the organic valence stabilizer is the S-(alkyl- or aryl-thio)thiocarboxylic acid and salt selected from S-(alkylthio)thiocarboxylic acids and salts; S-(arylthio)thiocarboxylic acids and salts; S,S-thiobisthiocarboxylic acids and salts; S-(alkyldisulfido)thiocarboxylic acids and salts; S-(aryldisulfido)thiocarboxylic acids and salts; and S,S'-disulfidobisthiocarboxylic acids and salts; and combinations thereof.

30. (Withdrawn) The pigment of claim 13 wherein the organic valence stabilizer is the phosphine and arsine sulfide or oxide selected from phosphine P-sulfides; aminophosphine sulfides; arsine As-sulfides; aminoarsine sulfides; phosphine P-oxides; aminophosphine oxides; arsine As-oxides; and aminoarsine oxides; and combinations thereof.

31. (Withdrawn) The pigment of claim 13 wherein a solubility in water of the cobalt/valence stabilizer complex is adjusted by an addition of a substituent group on the organic valence stabilizer.

32. (Withdrawn) The pigment of claim 31 wherein the solubility in water is increased by the

addition of the substituent group selected from sulfonate groups ($-SO_3^-$); carboxyl groups ($-CO_2^-$); hydroxyl groups (-OH); ester groups ($-CO_3-$); carbonyl groups (=C=O); amine groups ($-NH_2$); nitrosamine groups (=N-N=O); carbonylnitrene groups (-CO-N); sulfoxide groups (=S=O); sulfone groups ($=S[=O]_2$); sulfinyl groups (-N=S=O); sulfodiimines ($=S[=NH]_2$); sulfonyl halide groups ($-S[=O]_2X$); sulfonamide groups ($-S[=O]_2NH_2$); monohalosulfonamide groups ($-S[=O]_2NHX$); dihalosulfonamide groups ($-S[=O]_2MX_2$); halosulfonate groups ($-S[=O]_2OX$); halosulfonate amide groups ($=N-S[=O]_2X$); aminosulfonate groups ($=N-S[=O]_2OH$); iminosulfonate groups ($-N[SO_3^-]_{1-2}$); phosphonate groups ($-PO_3^{-2}$); phosphonamide groups ($-PO_2NH_2^-$); phosphondiamide groups ($-PO[NH_2]_2$); aminophosphonate groups ($=N-PO_3^{-2}$); and iminophosphonate groups ($-N[PO_3^{-2}]_{1-2}$); and combinations thereof.

33. (Withdrawn) The pigment of claim 31 wherein the solubility in water is decreased by the addition of the substituent group selected from nitro groups ($-NO_2$); perfluoroalkyl groups ($-C_xF_{2x+1}$); perchloroalkyl groups ($-C_xCl_{2x+1}$); nitramine groups ($=N-NO_2$); thioketone groups (=C=S); sulfenyl halide groups (-S-X); and sulfur dihaloimide groups ($-N=SX_2$); and combinations thereof.

34. (Withdrawn) The pigment of claim 13 wherein an electrostatic barrier layer of the cobalt/valence stabilizer complex is adjusted by an addition of a substituent group on the organic valence stabilizer.

35. (Withdrawn) The pigment of claim 34 wherein the electrostatic barrier layer is increased by the addition of the substituent group selected from ketones (=C=O); thioketones (=C=S); amides ($-C[=O]-NR_2$); thioamides ($-C[=S]-NR2$); nitriles or cyano groups (-CN); isocyanides (-NC); nitroso groups (-N=O); thionitroso groups (-N=S); nitro groups ($-NO_2$); azido groups ($-N_3$); cyanamide or cyanonitrene groups (=N-CN); cyanate groups (-O-CN); isocyanate groups (-N=C=O); thiocyanate groups (-S-CN); isothiocyanate groups (-N=C=S); nitrosamine groups (=N-N=O); thionitrosamine groups (=N-N=S); nitramine groups ($=N-NO_2$); thionitramine groups ($=N-NS_2$); carbonylnitrene

groups (-CO-N); thiocarbonylnitrene groups (-CS-N); sulfenyl halides (-S-X); sulfoxides (=S=O); sulfones (=S[=O]$_2$); sulfinyl groups (-N=S=O); thiosulfinyl groups (-N=S=S); sulfenyl thiocyanato groups (-S-S-CN); sulfenyl cyanato groups (-S-O-CN); sulfodiimine groups (=S[=NH]$_2$); sulfur dihaloimido groups (-N=SX$_2$); sulfur oxide dihaloimido groups (-N=S[=O]X$_2$); aminosulfur oxide trihalide groups (=N-S[=O]X$_3$); sulfonyl azide groups (-S[=O]$_2$N$_3$); sulfonyl thiocyanate groups (-S[=O]$_2$SCN); sulfonyl cyanate groups (-S[=O]$_2$OCN); sulfonyl cyanide groups (-S[=O]$_2$CN); halosulfonate groups (-S[=O]$_2$OX); phosphonyl thiocyanate groups (-P[=O]OHSCN); phosphonyl cyanate groups (-P[=O]OHOCN); and phosphonyl cyanide groups (-P[=O]OHCN); and combinations thereof.

36. (Currently Amended) The pigment composition of claim 1 further comprising a solubility control agent.

37. (Currently Amended) The pigment composition of claim 36 wherein the solubility control agent is selected from a cationic solubility control agent and an anionic solubility control agent.

38. (Currently Amended) The pigment composition of claim 37 wherein the solubility control agent is the cationic solubility control agent selected from H^+; Li^+; Na^+; K^+; Rb^+; Cs^+; NH_4^+; Mg^{+2}; Ca^{+2}; Sr^{+2}; Be^{+2}; Ba^{+2}; Y^{+3}; La^{+3}; Ce^{+3}; Ce^{+4}; Nd^{+3}; Pr^{+3}; Sc^{+3}; Sm^{+3}; Eu^{+3}; Eu^{+2}; Gd^{+3}; Tb^{+3}; Dy^{+3}; Ho^{+3}; Er^{+3}; Tm^{+3}; Yb^{+3}; Lu^{+3}; Ti^{+4}; Zr^{+4}; Ti^{+3}; Hf^{+4}; Nb^{+5}; Ta^{+5}; Nb^{+4}; Ta^{+4}; V^{+5}; V^{+4}; V^{+3}; Mo^{+6}; W^{+6}; Mo^{+5}; W^{+5}; Mo^{+4}; W^{+4}; Cr^{+3}; Mn^{+2}; Mn^{+3}; Mn^{+4}; Fe^{+2}; Fe^{+3}; Co^{+2}; Co^{+3}; Ni^{+2}; Ni^{+3}; Ni^{+4}; Ru^{+2}; Ru^{+3}; Ru^{+4}; Rh^{+3}; Ir^{+3}; Rh^{+2}; Ir^{+2}; Pd^{+4}; Pt^{+4}; Pd^{+2}; Pt^{+2}; Os^{+4}; Cu^{+}; Cu^{+2}; Cu^{+3}; Ag^{+}; Ag^{+2}; Ag^{+3}; Au^{+}; Au^{+2}; Au^{+3}; Zn^{+2}; Cd^{+2}; Hg^{+}; Hg^{+2}; Al^{+3}; Ga^{+3}; Ga^{+}; In^{+3}; In^{+}; Tl^{+3}; Tl^{+}; Ge^{+4}; Ge^{+2}; Sn^{+4}; Sn^{+2}; Pb^{+4}; Pb^{+2}; Sb^{+3}; Sb^{+5}; As^{+3}; As^{+5}; Bi^{+3}; Bi^{+5}; organic compounds containing at least one N^+ site; organic compounds containing at least one phosphonium site; organic compounds containing at least one arsonium site; organic compounds containing at least one stibonium site; organic compounds containing at least one oxonium site; organic compounds containing at least one sulfonium site;

organic compounds containing at least one selenonium site; organic compounds containing at least one iodonium site; and quaternary ammonium compounds having a formula NR_4^+, where R is an alkyl, aromatic, or acyclic organic constituent; and combinations thereof.

39. (Currently Amended) The pigment composition of claim 38 wherein the cationic solubility control agent is selected from H^+; Li^+; Na^+; K^+; Rb^+; Cs^+; NH_4^+; Mg^{+2}; Ca^{+2}; Sr^{+2}; Y^{+3}; La^{+3}; Ce^{+3}; Ce^{+4}; Nd^{+3}; Pr^{+3}; Sc^{+3}; Sm^{+3}; Eu^{+3}; Eu^{+2}; Gd^{+3}; Tb^{+3}; Dy^{+3}; Ho^{+3}; Er^{+3}; Tm^{+3}; Yb^{+3}; Lu^{+3}; Ti^{+4}; Zr^{+4}; Ti^{+3}; Hf^{+4}; Nb^{+5}; Ta^{+5}; Nb^{+4}; Ta^{+4}; Mo^{+6}; W^{+6}; Mo^{+5}; W^{+5}; Mo^{+4}; W^{+4}; Mn^{+2}; Mn^{+3}; Mn^{+4}; Fe^{+2}; Fe^{+3}; Co^{+2}; Co^{+3}; Ru^{+2}; Ru^{+3}; Ru^{+4}; Rh^{+3}; Ir^{+3}; Rh^{+2}; Ir^{+2}; Pd^{+4}; Pt^{+4}; Pd^{+2}; Pt^{+2}; Cu^{+}; Cu^{+2}; Cu^{+3}; Ag^{+}; Ag^{+2}; Ag^{+3}; Au^{+}; Au^{+2}; Au^{+3}; Zn^{+2}; Al^{+3}; Ga^{+3}; Ga^{+}; In^{+3}; In^{+}; Ge^{+4}; Ge^{+2}; Sn^{+4}; Sn^{+2}; Sb^{+3}; Sb^{+5}; Bi^{+3}; Bi^{+5}; organic compounds containing at least one N^+ site; organic compounds containing at least one phosphonium site; organic compounds containing at least one stibonium site; organic compounds containing at least one oxonium site; organic compounds containing at least one sulfonium site; organic compounds containing at least one iodonium site; and quaternary ammonium compounds having a formula NR_4^+, where R is an alkyl, aromatic, or acyclic organic constituent; and combinations thereof.

40. (Currently Amended) The pigment composition of claim 37 wherein the solubility control agent is the anionic solubility control agent selected from fluorotitanates; chlorotitanates; fluorozirconates; chlorozirconates; fluoroniobates; chloroniobates; fluorotantalates; chlorotantalates; molybdates; tungstates; permanganates; fluoromanganates; chloromanganates; fluoroferrates; chloroferrates; fluorocobaltates; chlorocobaltates; fluorozincates; chlorozincates; borates; fluoroborates; fluoroaluminates; chloroaluminates; carbonates; silicates; fluorosilicates; fluorostannates; nitrates; nitrites; azides; cyanamides; phosphates; phosphites; phosphonates; phosphinites; thiophosphates; thiophosphites; thiophosphonates; thiophosphinites; fluorophosphates; fluoroantimonates; chloroantimonates; sulfates; sulfites; sulfonates; thiosulfates; dithionites; dithionates; fluorosulfates; tellurates; fluorides; chlorides; chlorates; perchlorates; bromides;

bromates; iodides; iodates; periodates; heteropolyanions; ferricyanides; ferrocyanides; cyanocobaltates; cyanocuprates; cyanomanganates; cyanates; cyanatoferrates; cyanatocobaltates; cyanatocuprates; cyanatomanganates; thiocyanates; thiocyanatoferrates; thiocyanatocobaltates; thiocyanatocuprates; thiocyanatomanganates; cyanamides; cyanamidoferrates; cyanamidocobaltates; cyanamidocuprates; cyanamidomanganates; nitritoferrates; nitritocobaltates; azides; (thio)carboxylates; di(thio)carboxylates; tri(thio)carboxylates; tetra(thio)carboxylates; (thio)phenolates; di(thio)phenolates; tri(thio)phenolates; tetra(thio)phenolates; (thio)phosphonates; di(thio)phosphonates; tri(thio)phosphonates; (thio)phosphonamides; di(thio)phosphonamides; tri(thio)phosphonamides; amino(thio)phosphonates; diamino(thio)phosphonates; triamino(thio)phosphonates; imino(thio)phosphonates; diimino(thio)phosphonates; (thio)sulfonates; di(thio)sulfonates; tri(thio)sulfonates; (thio)sulfonamides; di(thio)sulfonamides; tri(thio)sulfonamides; amino(thio)sulfonates; diamino(thio)sulfonates; triamino(thio)sulfonates; imino(thio)sulfonates; diimino(thio)sulfonates; (thio)borates; di(thio)borates; (thio)boronates; organic silicates; stibonates; cyanides; cyanochromates; cyanonickelates; cyanatochromates; cyanatonickelates; thiocyanatochromates; thiocyanatonickelates; cyanamidochromates; cyanamidonickelates; nitritonickelates; arsonates; diarsonates; triarsonates; organic selenates; diselenates; triselenates; arsenates; arsenites; fluoroarsenates; chloroarsenates; selenates; selenites; fluorothallates; chlorothallates; iodomercury anions; chloromercurates; bromomercurates; osmates; fluoronickelates; chromates; Reinecke's salt; and vanadates; and combinations thereof.

41. (Currently Amended) The pigment composition of claim 40 wherein the anionic solubility control agent is selected from fluorotitanates; chlorotitanates; fluorozirconates; chlorozirconates; fluoroniobates; chloroniobates; fluorotantalates; chlorotantalates; molybdates; tungstates; permanganates; fluoromanganates; chloromanganates; fluoroferrates; chloroferrates; fluorocobaltates; chlorocobaltates; fluorozincates; chlorozincates; borates; fluoroborates; fluoroaluminates; chloroaluminates; carbonates; silicates; fluorosilicates; fluorostannates; nitrates; nitrites; azides; cyanamides; phosphates; phosphites; phosphonates; phosphinites; thiophosphates;

thiophosphites; thiophosphonates; thiophosphinites; fluorophosphates; fluoroantimonates; chloroantimonates; sulfates; sulfites; sulfonates; thiosulfates; dithionites; dithionates; fluorosulfates; tellurates; fluorides; chlorides; chlorates; perchlorates; bromides; bromates; iodides; iodates; periodates; heteropolyanions; ferricyanides; ferrocyanides; cyanocobaltates; cyanocuprates; cyanomanganates; cyanates; cyanatoferrates; cyanatocobaltates; cyanatocuprates; cyanatomanganates; thiocyanates; thiocyanatoferrates; thiocyanatocobaltates; thiocyanatocuprates; thiocyanatomanganates; cyanamides; cyanamidoferrates; cyanamidocobaltates; cyanamidocuprates; cyanamidomanganates; nitritoferrates; nitritocobaltates; azides; (thio)carboxylates; di(thio)carboxylates; tri(thio)carboxylates; tetra(thio)carboxylates; (thio)phenolates; di(thio)phenolates; tri(thio)phenolates; tetra(thio)phenolates; (thio)phosphonates; di(thio)phosphonates; tri(thio)phosphonates; (thio)phosphonamides; di(thio)phosphonamides; tri(thio)phosphonamides; amino(thio)phosphonates; diamino(thio)phosphonates; triamino(thio)phosphonates; imino(thio)phosphonates; diimino(thio)phosphonates; (thio)sulfonates; di(thio)sulfonates; tri(thio)sulfonates; (thio)sulfonamides; di(thio)sulfonamides; tri(thio)sulfonamides; amino(thio)sulfonates; diamino(thio)sulfonates; triamino(thio)sulfonates; imino(thio)sulfonates; diimino(thio)sulfonates; (thio)borates; di(thio)borates; (thio)boronates; organic silicates; and stibonates; and combinations thereof.

42. (Withdrawn) The pigment of claim 1 wherein the cobalt/valence stabilizer complex is adsorbed or mixed onto, into, or with an inert medium selected from oxides; hydroxides; phosphates; borates; silicates; carbonates; aluminates; titanates; molybdates; tungstates; oxalates; and polymers; and combinations thereof.

43. (Currently Amended) The pigment composition of claim 1 wherein the pigment is colored.

44. (Currently Amended) The pigment composition of claim 1 wherein the pigment exhibits a color change between cobalt oxidation states.

45. (Currently Amended) The pigment composition of claim 1 wherein the pigment is light-fast.

46-103. (Canceled)